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ABSTRACT

The purpose of this study was to analyze the ways in which the experiences and concerns of a predominantly African American and Hispanic community affect how they view environmental issues. Their views are intended to serve as a guide in the development of an environmental education program that is being developed at one of the local parks. Moreover, this study intends to amplify the voices, perspectives, and concerns of a community that has often been ignored in prevailing environmental education research. Both qualitative and quantitative methods/techniques were employed in the study. The participants came from nine schools in the South East Oakland community. The schools were chosen based on their proximity to the Martin Luther King, Jr. Shoreline Park. Nine students, 9 parents, and 29 teachers participated in the study. The students and parents were interviewed, all 29 teachers completed a survey, and 4 of the teachers were also interviewed. Parent and student participants were mainly African American and Hispanic, reflecting the population of the area. Teacher participants were roughly split between African American, White, and Hispanic racial groups. This study confirmed the findings of other studies that found that African Americans tend to see nature as a sustainer of human life (Caron 1995) and do not tend to make a separation between human and wildlife systems (Meeker 1973). In this needs assessment, African American teachers stressed the importance of focusing on the interdependence of wildlife and humans. Parents in this needs assessment expressed concern about pollution and wildlife alongside other issues that mainly affected the local community such as crime, health, and education. According to teachers, the most significant barrier that keeps schools from accessing environmental education programs is funding, especially for transportation. Teachers said they would participate in environmental education programs five times more frequently than they currently do if transportation and field trip costs were paid for. Another barrier that was identified through the study is that teachers do not know about existing programs and how to access them. The study identified other barriers such as a lack of curriculum, a lack of programming in Spanish, and a lack of time. Other categories emerged from interviews and surveys, including unequal access to environmental education programs, and the importance of developing programs that involve families and in some way benefit the social and/or economic conditions of the local community. (Contains 25 references.) (YDS)

Environmental Education Needs and Preferences of an Inner City Community of Color

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Tomio



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A field study submitted to the faculty of San Francisco State University in partial fulfillment of the requirements for the degree

**Master of Arts
in
Education: Special Interest
Concentration: Research and Multicultural Education**

by
Amiko S. Mayeno
San Francisco, California
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San Francisco State University
2000

The purpose of this study was to analyze the ways in which the experiences and concerns of a predominantly African American and Hispanic community effect how they view environmental issues. Their views are intended to serve as a guide in the development of an environmental education program that is being developed at one of the local parks. Moreover, this study intends to amplify the voices, perspectives and concerns of a community that has often been ignored in prevailing environmental education research.

This study employs both qualitative and quantitative methods/techniques. The participants came from nine schools in the South East Oakland community. The schools were chosen based on their proximity to the Martin Luther King Jr. Shoreline Park. Nine students, nine parents, and 29 teachers participated in the study. The students and parents were interviewed. All 29 teachers completed a survey and four of the teachers were also interviewed. Parent and student participants were mainly African American and Hispanic, reflecting the population of the area. Teacher participants were roughly split between African American, White and Hispanic racial groups.

This study confirmed the findings of other studies that found that African Americans tend to see nature as a sustainer of human life (Caron 1995), and do not tend to make a separation between human and wildlife systems (Meeker 1973). In this needs assessment African American teachers stressed the importance of focusing on the interdependence of wildlife and humans. Parents in this needs assessment expressed concern about pollution and wildlife alongside other issues that mainly affected the local community, such as crime, health and education.

According to teachers, the most significant barrier that keeps schools from accessing environmental education programs was funding, especially for transportation. Teachers said they would participate in environmental education programs five times more frequently than they currently do if transportation and field trip costs were paid for. Another barrier that was identified through the study is that teachers do not know about existing programs and how to access them. The study identified other barriers such as a lack of curriculum, a lack of programming in Spanish, and a lack of time.

Some categories emerged from the interviews and surveys including: unequal access to environmental education programs and the importance of developing programs that involve families, and in some way benefit the social and/or economic conditions of the local community.

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Chapter I

-Rationale and Significance-

Since the 1850's 90 percent of California's original coastal wetland acreage has disappeared, and many of the remaining wetlands are in danger of being further degraded or destroyed due to landfill, diking, dredging, pollution, and other human disturbances. The San Francisco Bay is no exception to this rule. At least 85 percent of its wetlands have been lost or destroyed since the arrival of Spanish settlers (California Coastal Commission Resource Guide, 1998).. These wetlands provide essential habitats for wildlife, and acts as a filter that helps to keep toxins and other pollution out of the Bay. By helping to protect the Bay, the wetlands act to protect the Bay as a source of food and other products that our economy and local fisher people depend upon. While the Bay Area communities rely on the Bay and their wetlands, many school children do not have the opportunity to experience and learn about the Bay first hand. This is particularly true for many urban communities of color that surround the Bay.

Very little research has been conducted on the interest in and concern for the natural environment from the perspective of people of color. People of color have been underrepresented in the environmental education field, which has tended to exacerbate their lack of input in shaping environmental education programs. This trend is apt to continue as people of color, in particular people of Latino and African American origin continue to be underrepresented in biological and environmental science college programs. (Clark, 1999)

A new program is being established in Oakland that relates to the Martin Luther King Jr. (MLK Jr. Park) Shoreline Park. The new program will be focused on serving students in the local community close to the park, in Southeast Oakland. To ensure that this program is developed in a consistent fashion with the local school communities' interests, needs and preferences, this needs assessment was conducted. The racial make up of the student population in the Southeast Oakland study area is as follows: Africans Americans 51 percent; Latinos 42 percent, Asian Americans 7 percent, and whites and Native Americans each make up less than one percent. Forty six percent of the students in this area are limited English Proficient.

Research Questions

The following questions were used to guide the study:

1. To what degree is there a need and interest in participating in an environmental education program at Martin Luther King Jr. Shoreline Park?
2. What are the barriers that keep the community from participating in existing environmental education programs?
3. How can an environmental education program at MLK Jr. Shoreline Park involve the racially, culturally, and linguistically diverse community and student body of Southeast Oakland?

Assumptions

The assumptions of the study are as follows:

- Families in the local area have limited experience with natural areas.
- East Oakland teachers are currently unaware of the educational opportunities that the MLK Jr. Park offers.
- The local community is concerned about the environment and would like to see an environmental education program at Martin Luther King Jr. Shoreline Regional Park
- There are economic, racial and linguistic barriers to East Oakland schools participating in existing environmental education programs that can be overcome through the design of a new environmental education program.

Significance

The significance of this study is that it provides insight into the experiences and concerns of a predominantly African American and Latino urban community in regards to environmental issues and

environmental education more specifically. This study can serve to help interested parties develop environmental education programs that are more accessible to communities of color.

This Golden Gate Audubon Society is developing an environmental education program at the Martin Luther King Jr. Shoreline Park. To ensure that the program is based upon the needs and preferences of the local community this needs assessment was conducted. This study is particularly important as it amplifies the voices, perspectives and concerns of a community that has often been ignored in prevailing environmental education research.

This chapter established the significance of this study. Chapter 2 provides a review of the literature, relevant to this study. Chapter 3 describes the study methodology, the sample and population and the data collection procedures. Chapter 4 presents the findings of the study. Chapter 5 provides conclusions and recommendations on developing an inner city environmental education program.

Chapter II

-Literature Review-

Overview of Literature

Very little literature was available that spoke to the issue of environmental education in urban communities of color. I identified only one article that addressed African Americans and environmental education. I identified quite a bit of literature on African Americans and the environment, but there was no literature addressing Asians and the environment, and only two articles on Hispanics and the environment. Due to the fact that Native Americans were less than 1% of the population in the geographical area of the study, I did not do a search on the environment and Native Americans. None of the articles discussed language barriers to environmental education or participation in environmental causes.

Although there were a number of studies on the effectiveness of environmental education, very few studies looked at the effectiveness of environmental education in African American communities. I was unable to locate any literature on the subject of language barriers and environmental education or even the environment in general.

There was no literature that looked at the perspectives of teachers, students and parents on environmental education in a single community. In addition, most of the literature was quantitative and very rarely gave a deeper sense of the perspectives of the participants. Kahn and Friedman's studies were the only exceptions. His studies provided a qualitative look at the environmental perspectives of African American parents (1996) and of African American elementary students in Houston (1995). While Kahn and Friedman's studies focused on the African American community, the goal of this study is to focus on the needs of both the African and Latino communities. The other difference between this study and Kahn and Friedman's studies is that this study examines different geographical locations.

This study builds upon the work of other research by Ham and Sewing (1987, 1988) on barriers to environmental education. Unlike Ham and Sewing's study, this study looks at barriers to environmental education in a racially diverse urban community. While I have attempted to focus on barriers to accessing environmental education programs, outside of the classroom, Ham and Sewing's study focused on barriers to teachers instruction about environmental education within their own classrooms.

The only other study located in a similar area was done by Washburne (1978). It involved some participants from Oakland. Washburne's study indirectly informed this study because it focused on leisure recreational activities and race.

The literature I identified fell into the following five categories: African Americans and environmental concern; African American and White conceptions of the relation between humans and nature; Hispanics and the Environment; the effectiveness of environmental education; and barriers to environmental education.

I. Measuring African Americans Concern for the Environment

Most of the literature relating to African Americans and the environment were studies on whether or not African Americans were as concerned as whites about the environment. Some studies found that African Americans were less concerned about the environment (Kreger 1973; Kellert 1985; Hershey et al. 1978), whereas other researchers found that African Americans were just as concerned about the environment as whites (Cutter 1981; Caron 1989; Caron 1995). Hershey et al. (1978) conducted one of the only studies on children, black people and the environment. He found that black and white children shared the same level of concern for the environment until the students reached the fourth grade. After that there was a growing gap between black and white students' concerns about pollution, with black students concerns decreasing, while white students concern level increased (Hershey et al. 1978). Earlier studies on race and the environment had not controlled for economic status and education. Hershey et al.'s study is significant in that he showed that race is a predictor of environmental attitudes, independent of economic status. Many of the studies on African Americans and environmental concern focused on the difference between whites and blacks as a group and downplayed the similarities. In most cases the similarities were actually greater than the differences. For example in Hershey et al.'s study a total of eight% of the variance in attitudes about pollution were assigned to race, implying that 92% of the variance is determined by factors other than race. Unlike many other studies Cutter (1981) found that black people were indeed very concerned about the environment, in particular as it relates to pollution. She found that the predominantly

black lower income communities of Chicago were more concerned about pollution than the predominantly white communities.

In a recent study conducted by Kahn and Friedman (1996) of 24 African American parents in Houston, they found that parents were very supportive of environmental education and often discussed the value of nature and wildlife in and of itself. They further concluded that parents supported environmental education for their children and saw it as being on par with drug education. According to Kahn and Friedman,

Eighty six percent of parents said that animals played an important part in the lives of their families. ... Eighty six percent of the parents also said that plants played an important part in their family and 95 % said parks and open spaces did... The majority(88%) of parents had conversations with their children about environmental issues....(1969: 8-9)

The authors felt that their findings contradicted other studies that found that African Americans were not very interested in the environment.

In earlier study of Black College students, almost all of the participants indicated that they felt that white people were more interested in ecology than black people. (Kreger 1973) The primary reason given was that black people have more pressing problems and economic restraints. Although the majority of participants in Kreger's study felt that the physical sphere was not as important as the social world, they did feel that solving ecological problems could have an effect upon, or was relevant to social problems. One participant indicated that black people should not be responsible for fixing the environment since they were not responsible for destroying it. Some participants indicated that environmental issues were diversionary from the more important social issues in their communities.

The inconsistent outcomes amongst various studies on the question of whether blacks and whites are equally concerned about the environment may be due in part to the fact that the studies were carried out in different regions of the country, and at different time periods. The differences may also be due to the very subjective nature of how concern levels are measured. Most of the studies on race and the environment involved multiple choice questioning. Therefore, the range of responses was controlled by the researchers. This approach makes it very difficult to accurately measure the actual concerns of participants, because participant concerns may not fit within the framework of how the researcher conceives environmental concern. One of the premises of much of the research on environmental concern and race was that concern for nature in and of itself demonstrates a higher level of environmental concern than concern for nature because humans are dependent upon it. The research designs were reflective of a perspective that views human and wildlife systems as separate. For example, in Kellert's study (1985), he defined an ecologist viewpoint as including wildlife systems, and dropped out humans' role in that system.

While there was no agreement between the various studies over whether or not African Americans are as concerned as whites about the environment, the studies did seem to agree that there are differences in the nature of how African Americans and Whites conceive the relations between humans and nature.

II. African American and White Views of the relations between humans and nature

According to Meeker et al.(1973), African Americans do not make a distinction between human systems and wildlife systems, whereas whites generally do. A study conducted twenty years later on the same subject, (Caron 1995) found that African Americans tended to value nature as a sustainer of human life, whereas whites tended to value wildlife and nature for its own sake.

In a study of children's knowledge of animals, Kellert (1985) found that the primary concern of Black children was more likely than white children to be based on the practical and material value of animals or the animal's habitat. Kellert also found that black children were more fearful of animals than white children and that black children were slightly more interested in the scientific biological aspects of animals than white children. He found that black children had less knowledge of animals on average than white students.

African Americans and Wildland Recreation Patterns

According to Washburne (1978), black people do not participate as frequently as whites in wildland recreation activities. The Washburne article outlined three predominant theories that attempt to explain the racial differences in wildland recreation patterns: a lack of access to wildlands due to lack of transportation, financial resources, and or discrimination; personal interest; and lastly that there is a subculture that rejects wildland recreation as an aspect of mass culture in order to maintain a cohesive

culture that helps protect its members against discrimination (Washburne 1978). He found that lack of access due to distance and economic constraints did play a role but that it did not account for all of the racial differences in wildland recreation patterns, giving more credence to the personal interest and subculture theories.

Although the Washburne study found that Black people recreated less frequently overall in wildland areas, compared to whites, in the specific areas of use of local parks, fishing and crabbing there was no significant difference between blacks and whites.

In Taylor's discussion of the environmental action gap between whites and blacks, she discusses Elidridge Cleaver's work (1969), who explains black alienation from nature as resulting from the experience of slavery where land was associated with a source of misery and humiliation, not of peace and fulfillment (Taylor 1989).

The majority of the African Americans lived in rural areas prior to World War II. In very recent history, African Americans were predominantly agricultural workers. The demanding experience of sharecropping in the South may have extended the negative association, which began with slavery. Rather than associating nature with leisure and recreation they may have associated it with backbreaking work.

Adding to this alienation, until very recently Blacks have been legally excluded from recreational areas (Taylor 1989). Many people of color avoid rural, predominantly white communities, due to direct experiences or reports of racial discrimination, including racial slurs and racial violence. Currently many sports in wildland areas are associated with white people. The potential for racial isolation and discrimination may act as a deterrent from people participating in these activities in greater numbers.

Meeker et al. (1973) offer another explanation that may shed light on the differences between African American and White recreational patterns. He suggests that black people do not share the predominantly European view that sees nature as a place to refuge from the evils of civilization, and that the present state of humanity represents a fall from an earlier state of purity symbolized by the Garden of Eden.

Taylor (1989) discusses the lack of black participation in environmental organizations. She suggests that the causes for this environmental action gap may include blacks not perceiving themselves as efficacious, and the environmental movement being defined by issues that are relevant to white people rather than those that are relevant to the health and welfare of communities of color.

Mainstream environmental organizations tend to be organized specifically to address the wildlife or other environmental issues, leaving other organizations to address social human needs. If African Americans do not make this type of separation between human and wildlife systems, this type of organization may lack appeal. In recent years people of color have become increasingly involved in environmental justice activities that have been primarily focused on environmental toxins that affect communities of color. (Russel 1989). Unlike many mainstream environmental organizations the environmental justice groups do not separate out the environmental and social concerns.

In Kahn and Friedman's 1996 study, parents were asked what they thought would be important for their children to learn about nature and to include in their children's school curriculum. Over a third of the parents suggested a focus on various forms of pollution, and about one quarter suggested a focus on plants and animal. Other responses included drugs and human violence, technology, recycling, and nature walks.

Based on the study findings, the authors suggested that urban educators address environmental conditions that directly effect the students' well being and that they address living in balance and respecting nature. They also suggested developing curriculum that deals with the animals and vegetation that are within their local neighborhoods.

III. Hispanics and the Environment

Noe and Snow conducted one of the only studies that focused on the environment and Hispanics was conducted in South Florida (1990). They found that there was not much difference in environmental sensitivity between Hispanic and non-Hispanic park users of Biscayne National Park. The study found that the Hispanic general public was somewhat more ecologically minded than the non-Hispanic general public. The Hispanic population tended to reject an anthropocentric point of view more readily than the non-Hispanic public. For example, the Hispanic general public more strongly disagreed with the statement that mankind was created to rule over the rest of nature.

In a study conducted by Blahna and Toch (1993), they compared environmental articles in a predominantly Hispanic magazine, *Nuestro* and a magazine with a predominantly African American readership, *Ebony* with the *Post*, that has a predominantly white readership. The authors found that:

Jobs, health or well-being in communities, and other quality-of-life factors were usually linked with environmental articles in Ebony and Nuestro. This demonstrates that, in order to appeal to minorities, environmental communication should emphasize the social and economic consequences of environmental policies and problems. (1993:27)

IV. Effectiveness of Environmental Education

There is a growing movement in schools across the country to use the environment as a centerpiece of the entire curriculum. This effort has been shown to increase student scores, improve student behavior, and improve attendance and attitudes towards school (Lieberman et al. 1998). The leaders of this movement include social justice issues as part of their environmental curriculum.

According to Iozzi (1989), most studies have shown that environmental education has been effective in increasing environmental concern. He found that the research, conducted before 1989, conflicted as to whether or not increasing information about the environment, in and of itself increases environmental concern. Iozzi argued that one has to teach environmental values to increase students participation in environmental protection. Although less common, some studies have correlated environmental education with decreasing environmental concern. For example one study compared students before and after an intense course about the environment. After students received the course, the gap between whites and blacks actually got wider. (Hershey et al. 1978) It is likely that diverging findings on the effectiveness of environmental education are related to the vast differences in the quality and nature of the actual programs being studied.

V. Barriers to effective environmental education

Ham and Sewing assessed barriers that teachers face in implementing environmental education programs (1987;1988). Ham and Sewing personally interviewed ninety-one teachers in the Palouse-region of western Idaho and Eastern Washington. The study did not indicate the ethnic make up of the participants or of the classes that they taught in. The lack of time was identified as the primary barrier to providing environmental education. The study found that pressures to teach other curriculum subjects leaves little time for teachers to teach about environmental education. Another major barrier was that teachers did not feel prepared to teach environmental education. Almost half of the teachers surveyed reported that they had participated in an environmental education teacher training workshop, yet most teachers indicated that they did not feel that they were prepared to teach environmental education.

Based on the findings of Ham and Sewing's study they recommended the following suggestions when designing environmental education workshops they should be: motivational, especially for non-science teachers uncertain of their abilities to teach environmental education in their classes; deal with Environmental Education in all areas of the curriculum; and provide training in using the classroom and the schoolyard as sites for Environmental Education. He also suggested that each school should compile a library of EE materials for each grade level.

Finally in a study conducted by Hanna (1992) in Alberta Canada, budgetary issues were found to be the amongst the most common barriers teachers encountered in outdoor environmental education programming.

Summation

While the literature is spotty and inconclusive on the topic of people of color and their level of environmental concern, the literature does provide interesting and informative insights on the nature of how African Americans and whites view the relations between humans and the natural environment. The literature found that unlike Whites, African Americans tend to avoid making a distinction between wildlife and human systems and they tend to value wildlife as a sustainer of human life. One of the only article on Hispanics and the environment found that Hispanics were more ecology minded than Whites in South Florida.

The literature identified budgetary restrictions, limited time, and teachers lacking confidence and or training as the primary barriers to environmental education.

Overall the literature found that environmental education programs are effective in leading to students taking action to protect the environment. But the literature was very limited on the effectiveness of environmental education programs in communities of color. The literature that did exist was inconsistent, which may be due to the variations in types of programs studied.

Chapter III

-Study Methodology and Procedures-

This chapter outlines the study methodology, describes the sample and population, as well as the data collection procedures and analysis.

Methodology

This is a qualitative study with some quantitative elements. According to Strauss and Corbin (1990) qualitative methods are useful to improve understanding of phenomenon about which little is known. As there has been very little research done on the perspectives of African Americans and Latinos and environmental education, the qualitative approach was employed. This approach allowed a greater flexibility and breadth of views to be expressed by participants. The survey included various aspects of naturalist inquiry, as outlined by Lincoln and Guba (1985). The quantitative aspects of the study were employed to help increase the generalizability of the study.

Data Collection Procedures

The target area is in a low-income area of Oakland. CBEDS assigns the area as a high poverty rating, because 78 percent of the students in the area receive a subsidized lunch. Three of the nine participating schools scored at or below the lowest decile on standardized testing in the State of California. The six other schools scored in or below the lowest 20th percentile in the state. The area has the lowest standardized test in Oakland. 46 percent of the students in the nine participating schools are Limited English Proficient Students. The racial composition of the students in the participating schools is as follows: 51 percent African American, 42 percent Hispanic, five percent Asian American, less than one percent White (.2 percent). The racial composition of teachers in the Oakland Unified School district as a whole, is as follows: 33 percent African American; 48 percent White; one percent Filipino; eight percent Hispanic; four percent Native American and two percent Pacific Islander. The gender composition of the teachers is as follows: 32 male, and 68 percent female. The statistics are based on data collected from the 1998-1999 school year (CBEDS web site).

The Sample

Student, teacher and parent participants from SouthEast Oakland public elementary schools were interviewed or completed a survey (See Table 1). The target area includes the area between highways 880 and 580 that run from the Oakland/San Leandro border to High Street in Oakland. Nine schools participated in the study. The nine schools were selected based on their proximity to the bus line that ran between the target area and the Martin Luther King Jr. Shoreline Park. This was done to reach the schools that had the easiest access to reaching the park by public transportation. None of the schools are in walking distance of the park.

Table 1

PARTICIPANTS	DATA COLLECTION METHOD	NUMBER
Teachers	Interview and Survey	3
Teachers	Survey only	26
Parents	Interview	9
Students	Interview	9
Total		47

Students

Nine students participated in the study¹. All of the students came from one classroom in one school. Seven of the students were African American and two were Latino(See Table 2). Seven were male

¹ To view student and parental consent forms see appendices 1 & 2

and two were female (See Table 3). Two of the students spoke Spanish and English, and the remaining seven spoke English only. All nine students were born in the USA. (See table 4). Their class was part of the Audubon's educational program that involved two visits to the Martin Luther King Jr. Regional Shoreline Park and one classroom presentation. The racial background of the students were representative of their classmates. The teacher sent home a consent form to all of the parents and I interviewed nine of these students. The nine students who participated were selected by the teacher. Students were interviewed in the hallway outside of their class, during class time. Students were asked a series of standard questions and based on their answers, various follow up questions were added to the interview (See Appendix 3).

Parents

Nine parents participated in this study. For purposes of this study I will define parents as the primary caregiver. Three of the parents were African American, five were Latino and one was Arab American. Eight of the parents were female and one was male. Four parents spoke Spanish only, one spoke Spanish and English, one spoke English and Arabic and three parents spoke English only. Three of the parents were from the United States of America, five were from Latin America and one was from Yemen.

I interviewed all nine parents. Four of the parent interviews were conducted in Spanish. The other five interviews were conducted in English. I requested parent participation from parents that were assisting on a field trip to the Martin Luther King Jr. Shoreline Park. Only one parent refused to participate. The parents had children in seven of the nine schools involved in the study. The parents were on six different days and they were interviewed at picnic tables in the park, while the students ate their lunches. Parents were asked a series of questions according to an interview protocol, and depending on their answers non standardized follow up questions were asked (See Appendix 4).

Teachers

Twenty nine teachers participated in the study. Eleven of the teachers taught in bilingual classes, six taught in sheltered English classes, and 12 taught in English only classrooms. Nine of the participating teachers were Latino, eight were African American; nine were White, two were Asian, and one teacher did not specify their race. Six of the teachers were male and 23 were female. Thirteen teachers spoke English only. Fifteen teachers spoke a second language and one teacher did not specify the languages that they spoke. 12 of the teachers that spoke a second language spoke Spanish. Other second and third languages included Russian, Portuguese, German, Yoruba, and French. Twenty-five of the teachers were born in the USA; two were born in Europe, one was born in Nigeria and one did not specify their country of origin.

Teacher participants were recruited from nine schools. The teacher surveys were administered in two ways. Thirteen of the teachers in the sample were selected because they were participating in an environmental education teacher training. These surveys were administered at the end of the teacher trainings at the MLK Jr. Shoreline Park. The principals of the nine schools determined which teachers would participate in the teacher training. The remaining 16 teacher surveys were administered by four of the teacher training participants, at four different school sites.

Three different survey instruments were used. The first survey was less in depth, because they accompanied the interviews (See Appendix 5). The only differences between the second and the third survey instruments were the formatting and one question on the preferred number of visits (See Appendix 6 & 7). In the analysis I discussed the two different versions of this question separately.

Four of the 29 teachers surveyed were also interviewed (See Appendix 8). All four teachers were selected from a pool of fifteen teachers that participated in an environmental education teacher training. All four teachers that were invited to be interviewed, agreed to participate. One was white, one was black, and two were Latino. Three of them were women. Two interviews took place in coffee shops and two interviews were conducted in the teacher's classrooms after school hours.

All of the data was collected during the 1999-2000 school year. The teacher surveys consisted mostly of open-ended questions. I personally interviewed the students, parents and teachers. Depending on the answers I often added follow up questions to explore their comments further. All of the names of the participants were changed to protect their identity.

Data Collection and Analysis:

The data collection was triangulated by involving parents, students and teachers in the study. According to Marshall (1995), the method of triangulation enhances the generalizability of a qualitative study.

Table 2

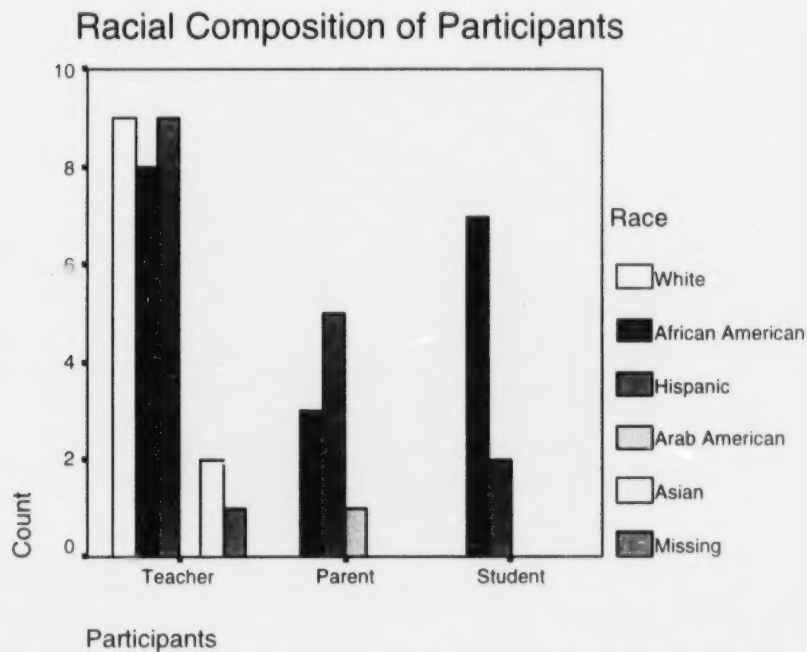


Table 3

Gender of Participants				
	Participant			Total
	Teacher	Parent	Student	
Female	23	8	2	33
	79.3%	88.9%	22.2%	70.2%
Male	6	1	7	14
	20.7%	11.1%	77.8%	29.8%
Total	29	9	9	47
	100.0%	100.0%	100.0%	100.0%

The interviews were recorded on a minidisc audio recorder and transcribed and coded for emergent themes. The interview data was coded through open coding initially. After identifying key concepts and categories, I reviewed the data through a selective coding strategy. This strategy was employed because not enough was known about the population to determine the categories in advance.

Table 4

Country of Origin of Participants

Country of Origin	Participant			Total
	Teacher	Parent	Student	
USA	25 89.3%	3 33.3%	9 100.0%	37 80.4%
Latin America		5 55.6%		5 10.9%
Europe	2 7.1%			2 4.3%
Africa	1 3.6%			1 2.2%
Middle East		1 11.1%		1 2.2%
Total	28 100.0%	9 100.0%	9 100.0%	46 100.0%

Some of the data is reported in narrative form. More extensive narrative from one teacher and one student was reported. The student, who we will call Michael, was chosen because he articulated his feelings and experiences with nature extensively. The teacher, whose narrative was highlighted, was chosen because she gave more elaborate thoughts and recommendations than the other interviewees. The quantitative data analysis consists of descriptive statistics, including reporting frequencies, proportions, means, modes, and medians. Based both on the preferences of students, teachers and parents, I developed recommendations for a new environmental education program at MLK Jr. Shoreline Park.

Limitations of the study

The study was limited by the fact that the samples selected were not completely random. The parents were assisting on a field trip with their class, which restricts the sample to individuals that were willing to participate in a field trip, and or had the flexibility to participate during the workday. Nonetheless, many of the parent participants had very limited previous experiences with nature.

The students were also all from one classroom. They may not have reflected the experiences of some of the other classes in the study area. All of the students had already received three sessions of environmental education. We do not know if the student and parent perspectives may have been influenced by their participation in this program.

Thirteen of the teachers surveyed were participating in an environmental education program. Their perspective may be somewhat different from teachers that are not currently participating in environmental education programs. To address this, I compared the frequency of environmental education program participation of teachers that were participating in the teacher training with those that were not. A slight difference did appear, with the mean number of previous EE programs for teacher training participants was one program, while the non-program participants had a mean of .88 program.

The student sample is over representative of males and the parent sample is over representative of females by approximately the same percentage. African American students were over represented in the student sample, while Latino parents were over represented in the parent sample.

I was unable to locate statistics on the racial composition of teachers in the target area. But I was able to locate racial composition of the Oakland Unified School District. I found that the sample was within one percentage of the African American and Asian American teachers in the district, but the sample was over representative of Latino teachers and under representative of white teachers. The district has only nine percent Hispanic teachers as compared to the 19 percent of the participating teachers in the sample that were Hispanic. It is likely that the sample is actually closer to the population of the target area than it is of

the district. There is a larger percentage of bi-lingual classes in the target area than the district as compared with the district as a whole.

Summary

This study was based on a combination of a qualitative and quantitative study design. The data collected in this study included teacher, students and parent perspectives from a single inner city community, during the 1999-2000 school year. Parent and student participants were mainly African American and Latino, reflecting the population of the area. Teacher participants were roughly split between African American, White and Latino racial groups. The two methods for conducting the study were interviews and surveys. The data collected mainly fell into the following categories: current usage of the MLK Jr. Shoreline Park; barriers to environmental education; environmental education program suggestion; previous nature experience and parent and student perspectives. These categories will be delineated in the following chapter.

Chapter IV

-Findings-

This chapter discusses the findings in four sections: Quantitative data analysis; emergent categories; student and teacher profiles; and a summary.

I. Quantitative Data Analysis

The quantitative data is categorized into three areas: participants' previous nature experiences; barriers schools face in accessing environmental education programs; and environmental education curriculum suggestions

Previous nature experiences

According to teachers, families in the East Oakland Community have very limited experiences with nature. Gloria, a first year Latina teacher, explained it as follows:

They're not exposed to any green, they don't even have the opportunity to go outside and be able to look at plants, much less study about them because it's not there. Outside is all sidewalk street and pavement. These schools look like prisons.

Janice, a caucasian first year teacher commented on the fact that most of her students had never been out to see the Pacific ocean.

Parents and students confirmed the teacher's impressions. Of the 18 parents and students interviewed, five had never visited a natural area; the natural experiences of eight participants were limited to the beach and or a city park, two had experience camping, while three had another experience with nature outside of the city (See Table 5).

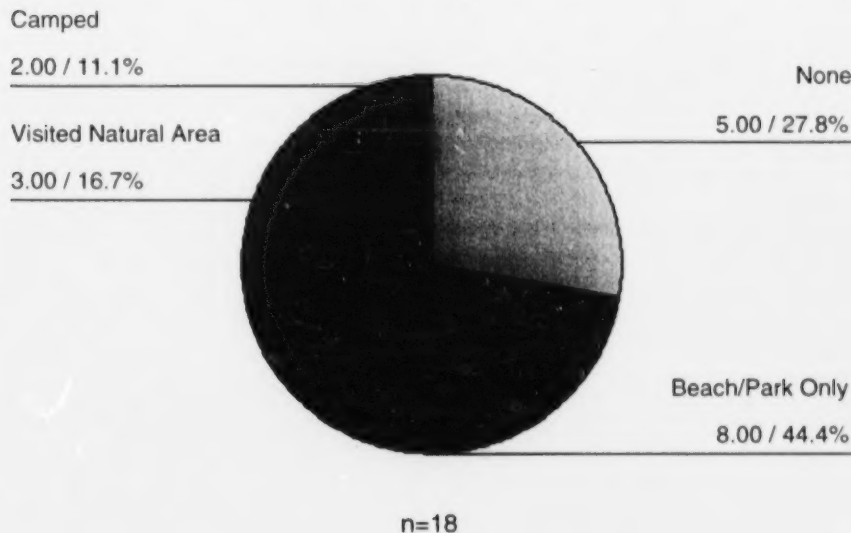
Local schools do not appear to be accessing the Martin Luther King Jr. Shoreline Park. None of the 29 participating teachers had visited MLK Jr. Shoreline with their class in the past year. Through informal discussions, I ascertained that none of the 13 teachers at the training were aware of the existence of the MLK Jr. Shoreline Park, previous to the training, even though these teachers had been selected because of their schools proximity and accessibility to the park. In contrast to the teachers and schools, a number of the families interviewed had previously visited the park. Seven of the 18 students and parents interviewed had previously visited MLK Jr. Shoreline Park. Some families had visited quite frequently.

As mentioned earlier nine students were interviewed. All of the students reported that they had never participated in an environmental education program, other than the one at MLK Jr. Shoreline Park. Students

Table 5

Previous Nature Experiences

Parents and Students



had very limited exposure to nature. When the students spoke about nature, their information came mostly from indirect sources, such as television or books, rather than direct observations in nature.

Without this direct experience, many of the concepts often used in environmental education programs, such as nature, wildlife and ocean, seemed to have limited meaning for many of the students.

Students mentioned various sources of their information. Four students reported getting information from television, one from newspaper, one learned it during their field trip, one from an encyclopedia, one from their parents and two others from their teacher. More than one source was mentioned by some of the students.

When I asked students what being an endangered animal meant, most of the students could name an endangered animal, but only four of the nine students understood what it meant. Most of the students thought that being an endangered animal meant that the animals were dangerous.

Most of the students did not make a distinction between wildlife and domestic pets. Four students felt they could best help the animals, by feeding them. Two students talked about feeding birds and two talked about feeding their dogs. Other than at the MLK Jr. Shoreline Park, students rarely mentioned experiences with wild animals. Two of the students mentioned seeing birds, two others mentioned seeing raccoons, and one mentioned seeing an antelope in Mexico.

The four students that seemed to be more knowledgeable and interested in the environment had more direct experience with nature than the other students. Two of these students reported having had discussions with their parents about environmental concerns.

Barriers

Teachers expressed a strong desire to participate in environmental education programs. Twenty-four of the 29 teachers indicated that there are barriers that keep them from participating in more programs. The remaining five teachers were not certain of whether or not there were barriers. Funding and transportation were the main barriers emphasized by teachers. Teachers indicated that they would be much more willing to participate in environmental education programs if transportation were provided or if programs were accessible by public transportation. Thirteen of the teachers were asked: how many times a year, if any would you be interested in bringing your students to an environmental education program that was available on public transportation. The average number of times teachers indicated that they would

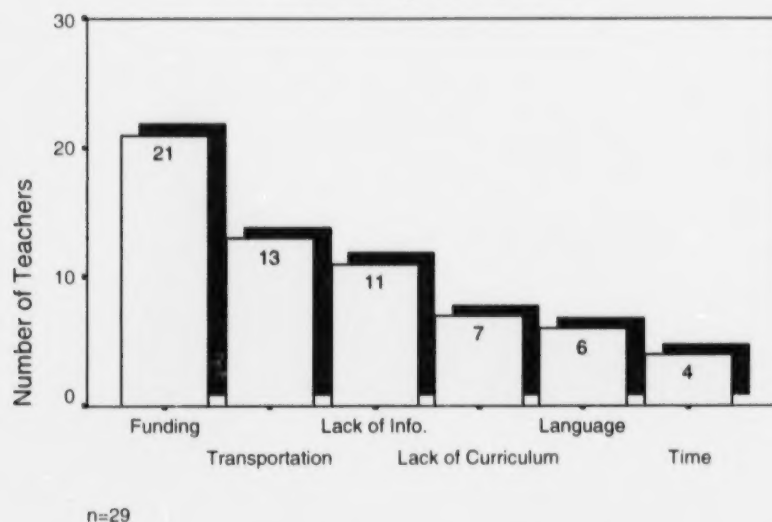
like to bring students to an environmental education program was four times. Sixteen other teachers were asked: How many times a year, if any would you bring your students to environmental education programs that offered free transportation and admission costs². On average teachers indicated that they would bring their students to an environmental education program 6.33 times per year. All 29 teachers were asked how many environmental education/interpretive programs or natural areas did you visit with your class last year?³ Fourteen of the participants had not participated in any environmental education programs the previous year. The average number of visits they made was 1.23. In other words, teachers indicated that they would on average participate over five times more often if they did not have to worry about the costs of transportation and other field trip fees.

Teachers were asked a series of open ended questions, such as: If there are barriers, what are they and do you have any suggestions for overcoming them? Teachers often gave more than one response. Of the 29 teachers asked about barriers, 21 felt that lack of funding was a barrier. Funds for transportation, curriculum materials and field trip costs were mentioned within this category. Thirteen teachers mentioned transportation as a barrier and seven teachers mentioned a lack of curriculum.

Another barrier that became clear was the fact that the teachers lacked information about existing programs. Eleven teachers mentioned their lack of knowledge of existing programs as a barrier, which will be discussed at greater length below. The other common barriers that were mentioned included: six teachers mentioned a lack of Spanish language materials and/or Spanish speaking educators and four teachers mentioned a lack of time (See Table 6)

Table 6

Barriers to Environmental Education According to Teachers



Teachers felt that a lack of curriculum supplies in the classroom was another barrier to teaching environmental education. Four teachers mentioned the need for equipment such as binoculars, microscopes, and magnifying glasses. Teachers expressed a frustration with the lack of science curriculum in the schools. Four teachers discussed the FOSS kits that all of the teachers had access to. But teachers described a frustration with missing pieces and the difficulties with reordering missing pieces. The Foss program was reviewed positively for being easy to use. Teachers were frustrated with the lack of a student

² I excluded three teachers because I could not quantify their responses and for purposes of comparison with past years, I excluded all first year teachers.

³ I excluded the responses of 7 teachers because it was their first year teaching and therefore there was no possibility of visiting an environmental education program during the previous year.

science workbook or textbook. One teacher suggested a master student workbook that the teacher could make copies from, for the student.

Environmental Education Curriculum Suggestions

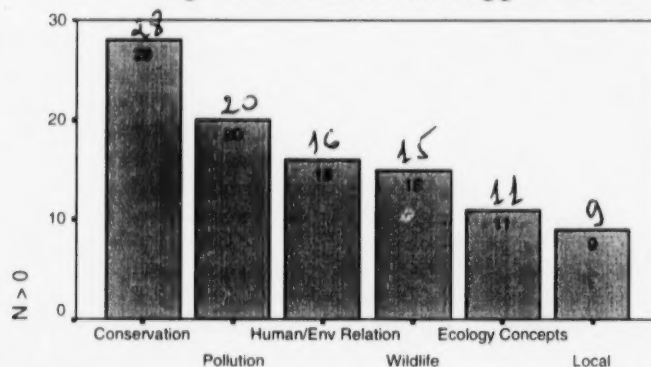
Parents and teachers were asked what aspects of the environment are most important for elementary students to learn about. Many of the respondents gave more than one response.

Teacher and parent participants made suggestions on what environmental education programs should focus. I categorized their suggestions into the following general program content areas: Conservation, 28 respondents; pollution, 20 respondents; human/environment relations, 16 respondents; wildlife, 15 respondents; ecology concepts, 11 respondents; and local areas; nine respondents (See table 7).

African Americans mentioned the importance of teaching about the interdependence of humans and other life forms more frequently than they mentioned the importance of teaching about human's impact on the environment. Only one of the 11 African American respondents suggested teaching humans impact on the environment whereas five African American respondents suggested teaching about the interdependence humans and the environment. On the other hand, White and

Table 7

Program Content Area Suggestions



Suggestions relating to content areas

38 Teacher and parent

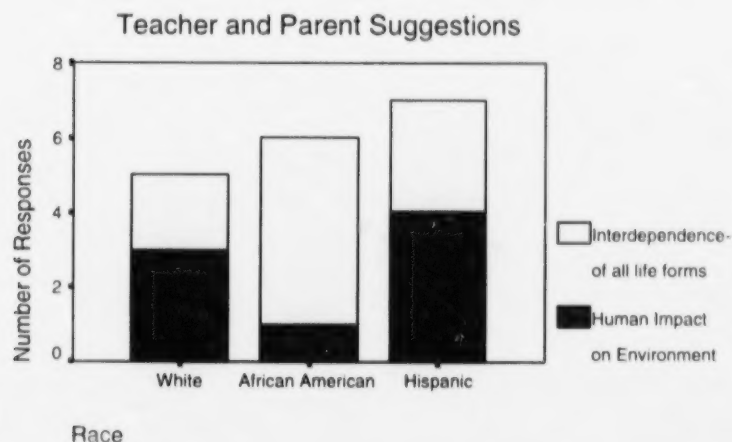
More than one response possible

Latino respondents mentioned teaching human impacts on the environment, slightly more frequently than they mentioned interdependence of humans and the environment (see table 8).

Table 8

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Teaching Humans Relation to the Environment



16 of 38 teachers and parents chose to comment

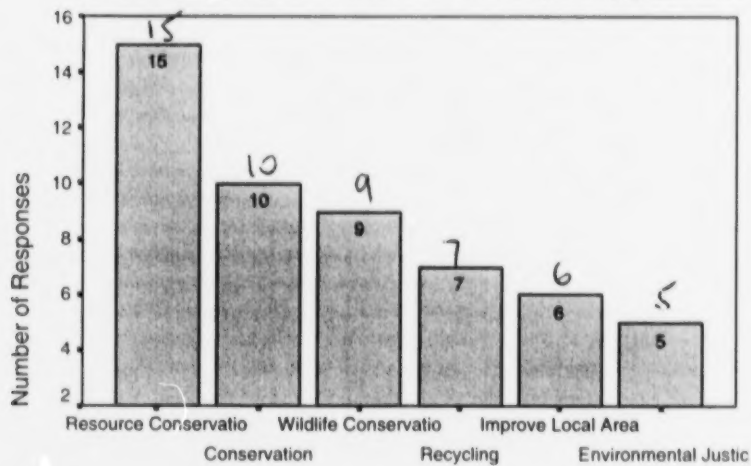
more than one response possible

The findings of the study were inconsistent with prevailing literature that has found that African Americans are not interested in the outdoors and wildlife. The African Americans in this study mentioned wildlife and outdoor education slightly more frequently than they mentioned pollution-related topics. Latino respondents more frequently mentioned pollution related topics as compared to wildlife topics by a slight margin. Whites were equally split between the two topics.

As was mentioned above twenty-eight teachers and parents indicated that it is important for students to learn about conserving the environment. The nature and type of conservation related teaching suggestions were varied: Fifteen of the respondents mentioned the importance of teaching conservation of resources such as air and water quality; 10 mentioned conservation in general; nine mentioned wildlife conservation; seven mentioned recycling; six mentioned improving the local neighborhood; and five mentioned environmental racism or environmental justice. (See table 9)

Table 9

Conservation Related Teaching Suggestions



38 parents and teachers

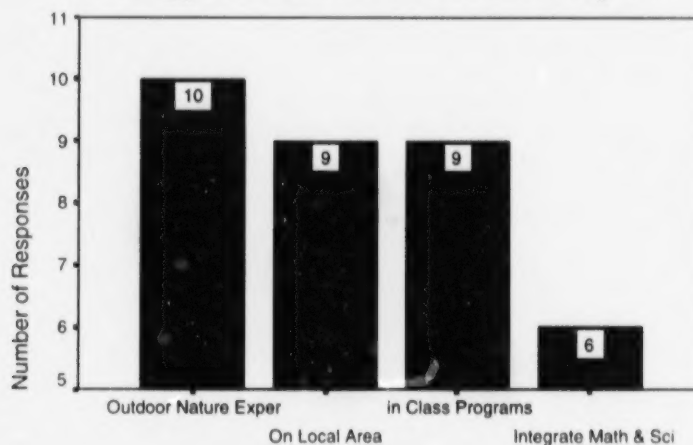
Participants were allowed more than one response

One of the few differences between parent and teacher responses was that a larger percentage of parents than of teachers emphasized the importance of teaching students about wildlife conservation. Four of the nine parents as compared with five of the 29 teachers mentioned the importance of teaching students about wildlife conservation

On the nature of environmental education program, ten respondents mentioned the importance of teaching the students outdoors; nine respondents suggested bringing environmental education programs to the classroom; nine respondents suggested making the program local; and six respondents suggested integrating math and science into the curriculum.(Table 10).

Table 10

Suggestions on Nature of EE Program



38 Teachers and Parent Participants

More than one response possible

Two teachers suggested making gardens in the schools. Two other teachers suggested taking the kids for overnight camping experiences. Six teachers suggested integrating the environmental education

programs with science and math curriculum. One of these teachers suggested developing a year round environmental education program that covered all of the science benchmarks for that grade level, so that by participating in the program the teachers could fulfill the entire science requirements for that year. Another teacher and the Science Curriculum Director suggested developing an environmental education program that was focused on developing literacy skills. Because there is so much pressure for teachers to teach to the standardized tests, the teacher thought this would be an attractive option for other teachers.

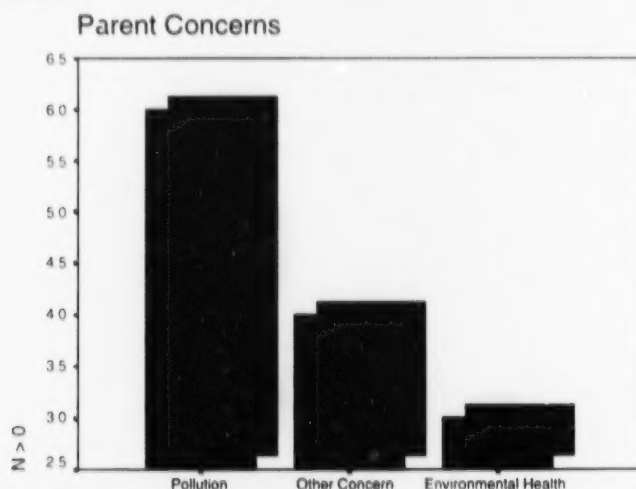
There were very few differences between the responses of parents as opposed to the responses of teachers in regards to what they felt was most important to teach students about the environment. One difference that did show up was that parents did not mention where the education should take place, for example some teachers mentioned that it should be locally related or that it should take place outdoors.

Teachers were asked open-ended questions such as, Do you have any suggestions on how environmental organizations can serve the needs of Oakland's racially, nationally and linguistically diverse communities? Some of the most common responses included: make the program local, provide Spanish language materials and naturalists, and involve families. One teacher suggested a book list that addresses diverse racial groups.

Two teachers suggested developing a list of relevant books and videos that were related to the topics covered in the environmental education program for students.

Parents most frequently suggested teaching students about wildlife, their most frequently mentioned concern about the environment was pollution. When asking parents if they had concerns about the environment, all nine responded in the affirmative. When asked what were their concerns, six mentioned concerns about pollution; three of the parents mentioned environmental health concerns; two parents mentioned trash; and two parents mentioned crime. Other concerns that individual parents mentioned included racism, animals being killed, atomic energy research, and waste (See Table 11).

Table 11



II. Emergent Categories

After reviewing the interviews and the surveys some categories emerged. I will discuss four of these categories: unequal access; involving families; and connecting to social and economic needs of the community.

Unequal Access

Schools in the Southeast Oakland areas face many barriers to accessing environmental programs that more affluent areas seem to avoid. These barriers are particularly significant in the Southeast Oakland community. For example, the Southeast Oakland schools have very limited budgets for transportation and other field trip fees.

One African American teacher described the problem:

Well, I think a barrier for our school is that we're underfunded because we can't pay. ...For us here we don't have microscopes, we don't have any of that

stuff. So if we were to do it ourselves we don't have funding to actually do that sort of thing on our own. ...So that's a major barrier.

Some of the other districts in higher income areas request funds from parents to pay for field trip costs, and/or to help their children raise the funds for these field trips. This type of fundraising can be a tremendous strain on families where both parents work, often more than one job each, and because these families rarely have much disposable income, many of the schools made it a policy to not request funds from the parents.

Another example of unequal access to environmental education programs is that teachers in Southeast Oakland do not find out about environmental education programs as readily as teachers in other areas.

When I asked one first year Latina teacher if she felt there were sufficient environmental education programs in the area, she responded as follows:

Well, there might be but I'm not so sure they have been discovered, because there is a difference between something being available and students, parents and teachers knowing that they are available.

This appeared to be a significant factor in keeping teachers from participating more in Environmental education programs. This lack of knowledge may be influenced by the fact that there is a very high turnover rate of teachers in East Oakland, which means that teachers do not have the chance to learn about the programs before they leave their positions. Of the teachers surveyed, 13 were in their first or second year of teaching (See Table 12).

Language barriers are another example of unequal access. None of the teachers interviewed were aware of any environmental education programming that included Spanish language programming.

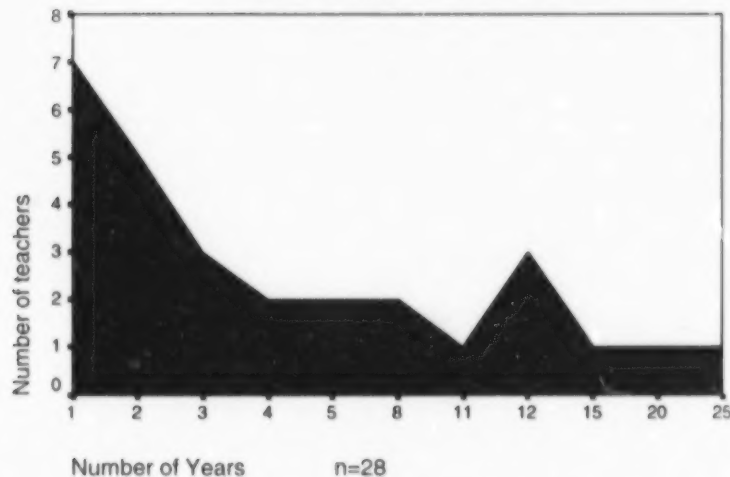
Another teacher suggested multilingual information docents and signs. Claudia suggested providing native speaking interpreters.

During an informal discussion with a principal at one of the participating schools, she suggested developing a letter writing program between students from the bilingual classes and students somewhere in Latin America. Half of the teachers that had never previously participated in an environmental education program were first year teachers. Another reason teachers do not find out about environmental education programs is that they do not

have the time to research them. Teachers expressed their frustration with the lack of time they had to find out about existing programs. They explained that they just don't have time to find out what type of

Table 12

Previous Teaching Experience of participating teachers



environmental education programs are out there, and how to access them. Claudia Padilla put it this way:

It's just so overwhelming, being a new teacher. I have these goals in five years theirs just so much you can do, there's so many creative ideas, but you're just swamped with time, you don't have enough time and you're just swamped with all the things that you need to do.

Southeast Oakland schools appear to have less access to environmental education (EE) programming than more affluent schools in the Bay Area. Limited funding for transportation and being left out of communication on what programs exist and how to access them, appears to lead to many of the Southeast Oakland schools being left out of environmental education programming.

Involving Families

Teachers suggested involving families in any type of environmental education programs that are developed.

One teacher, Claudia Padilla spoke on the subject of involving Spanish speaking families and families in general:

*...it's good that they(the district) put those out(written materials in Spanish)
...but it seems like what's more effective is having people that can actually talk
to the parents.. because there are some of my parents that aren't literate. I just
think it's more effective to have community outreach people instead of having
people publish a whole bunch of pamphlets. ... I think if you were going to have
some kind of community program... you would want to talk to the community,
because it's kind of like the school is a community center, because they have
meetings and they talk about community issues. Like crime, you know I think
there's a lot of interest on the part of the parents, to not only have school be for
their kids, but also for it to be a community gathering place, so I think you
would want to just talk to parents and say how would you want to see your
community improved, and maybe they would say, like I was saying to pick up the
garbage and plant trees.*

On the subject of reaching parents and the community Claudia suggested:

*...trying to somehow get...parent liaisons or community members. that
would probably be the most effective thing. Like if somebody in the
community was the person, you could somehow train someone to be the*

spokesperson, someone that is from the community, rather than an outsider.

Later in the interview Claudia suggested using High school students as spokespersons to reach the community. She also made this observation concerning parent involvement:

You know lots of parents respond to it if theirs some benefit for the parents, like there is some program where there is computers and the benefit is that parents can borrow and take the computers home and use them...because they're busy too, and I just don't think they would want to get involved in a program unless there's a benefit for them.

The parent interviews confirmed some of the teachers' comments on the value of involving parents in environmental programs. Parents expressed a deep appreciation for experiencing nature and learning about the environment more generally. Seven parents were asked whether or not the parents would be interested in participating in a weekend program at MLK Jr. Shoreline Park, four parents answered enthusiastically that they would like to participate. Three parents said they might be interested. One of them indicated that they did not have a car so it would be difficult to come and another indicated that they often have to work on the weekends.

Parents talked at length about what they appreciated about nature, but when asked what they didn't like about nature, for the most part, they had nothing to say. The only complaint that one parent made was that sometimes the parks get crowded.

Parents often gave more than one response to the question, what do you like most about nature? Five of the parents mentioned they liked breathing the clean air, and three parents mentioned they liked the quiet peaceful nature of it, or the lack of stress. Five of the parents mentioned the wildlife, including plant life. Two of the parents mentioned that they like seeing their children enjoy themselves. Two parents said they liked how the children were able to focus on learning. Here are some of the responses of various parents to the question of what they liked most about nature:

Parent 1: *We can breathe clean air, feel less stressed being in nature. Peace of mind. In the city you can feel stressed;*

Parent 2 *The clean clear water, the beautiful sun, the snow is beautiful also. The trees, everything is so beautiful, it gives more life to everything.;*

Parent 3 *The birds, it was amazing to me to see how smart the birds are....I was also amazed to see how engaged the children were in learning.;*

Parent 4 *That the children understand the best things in life you can't buy.*

One teacher mentioned that one of the best ways to reach the parents is through their children, because they teach their parents so much. Two parents confirmed this thought when they indicated that they learn a lot about the environment from their children. One parent put it this way:

My son teaches me a lot of different things now. Especially when they have a class where they learn about different plants and different seeds...I think it's great for kids to go out to these different types of field trips and they can come back and tell they parents, I know something you don't know. And you know, you didn't know it. And it makes them want to go out and learn even more.

Another parent stated: *the children are little professors, they can teach the adults.*

In summary, teachers expressed interest in involving parents in environmental education programming, and parents expressed in environmental education programming.

Develop programs that benefit the social and economic conditions of the local community

The recommendations that teachers and parents made often involved addressing environmental education issues in a fashion that would simultaneously improve the economic and social conditions of the local community. Here are some representative comments:

Make the environmental education they receive relevant-i.e. there are factories in our area that not only pollute the watersheds but make our neighborhood unlivable.

4/5th grade English only teacher, White

Students need to see that their efforts can improve the immediate environment; that is they need to be shown how to improve neighborhood conditions

-4/5th grade bi-lingual teacher, White

.. some sort of urban environmental education, like recycling, in general making the community more beautiful, planting trees, picking up garbage, and connecting that to nature and wildlife too. And even in the urban environments there is wildlife and there are ecosystems, and connecting that, but it definitely has to have an urban focus, just because it's more practical and it also would be more representative of their situation.

-4th grade bi-lingual teacher, Latina

Parents and teachers were interested in environmental programming that could help improve students science and literacy skills. One Latina teacher suggested paying parents to help lead the environmental education programs. While she did not make outright statements about developing environmental education programs should simultaneously address the social and economic needs of the community, their suggestions appear to be examples of this idea.

Parents did not make a strict distinction between the physical environment and the social environment. For example, some of the environmental concerns that parents mentioned involved crime and drugs. Both parent and teacher participants described various situations where a lack of safety made it difficult for students to participate in the local green areas within their community. Gloria, a first year, Latina teacher commented,

We have this grassy field... it's not really a safe environment for the kids, just cause during the weekends and after school it gets kind of crazy out there, the kids will find syringes and condoms... I just don't want them going out there.

Parents were concerned about the safety of local parks as well. One Latina parent told me:

There is a park nearby(our home) but its very ugly, only grass, whenever you pass by you see.. people selling drugs.

Another Latina parent, expressed her concern about dangerous trash being thrown in the natural areas, and her concern that the children would be exposed to robbers and rapists. This is another example of how it is difficult to separate out the social and physical environmental concerns. In this circumstance one may need to address the social concern of safety as a first step to encouraging the local community to experience a closer relation with the green areas that do exist in their neighborhood.

When students talked about environmental issues, social and economic conditions were often intertwined into the discussion. One African American student described why he recycles:

...so everything on your property won't have trash. I wish when I grow up I could have a job like that so i can get paid a lot of money, and um and I can teach m kids how to recycle. And if I want to recycle stuff, all I have to do is take it to my job and they pass it to the store man and they pass it on to people."

His younger brother Micheal commented as follows:

When I see cans, I either take them to the store and get money for them or I give them to somebody that collects them and they go to recycle. I buy stuff, drink sodas, give sodas to my parents and stuff and keep the cans and give them to my grandma and she take um to be recycled."

Students, parents and many of the teachers did not treat physical environmental concerns as a separate issue from the human condition, but often treated them as an integrated whole.

III. Student Profile

Michael is nine years old and is of African American descent. The school he attends is located in a very low income neighborhood that is made up almost exclusively of African American and Latino children. He is one of four children that live with their single mother. According to her sons, the mother works as a security guard, and in caring for disabled people at night.

This student and his brother were the only interviewees that had access to a natural area, which was in walking distance from their house. He and his friends explored the area regularly. Michael described the area as having "oranges and pears and nectarines back there. Some people cannot be lost but they almost can."

Other than his experiences with the environmental education program at MLK Jr. Shoreline Park, Michael reports having no other nature experiences supervised by an adult. Michael discussed his fear and comfort level around birds and other animals.

Interviewer: What else did you learn at MLK Jr. Shoreline Park?

Michael: I learned that birds don't attack you if you don't mess with them. I knew that birds don't attack you, but I learned that birds that you haven't seen don't attack you most often.

Cause if you get close to one it don't do nothing. I thought when you get close to one like the red tailed hawk that it attacks, but it don't.

Although some of his fear had been reduced, it hadn't disappeared. Later in the interview he described fear of wild animals and birds. Like most of the other students interviewed it appears that Michael uses the term wild to indicate out of control and dangerous. He reported that birds can peck out somebody's eyes, and that he saw it on the Woody Woodpecker television show. This child's experience is consistent with one study by Bixler (1994), who found that many of students fears about wildlife come from television and movies that depict scary animals.

Michael described strong connections that he experienced with the animal life that he encountered, through his own encounters.

Interviewer: So what do you like most about nature?

Michael: What I like about nature, is nobody bothers you. It's not like all the time. What I like about nature is nature is just a good place to be.

Interviewer: What do you feel when you're in nature?

*Michael: Just feel fine, I feel like I'm a toy or something.
...How I move and stuff I be. I wonder what made that. I know that god did.
But its something else about it. It's something else that feels strange. It's like it's automatic when I'm just moving.*

Interviewer: So what have you learned about how to protect nature?

Michael: Yeah, don't scare birds off when they eating. Keep people from catching and killing animals. Keep people from throwing things in the sea, like cans apples and throwing old boots or something in. And don't try to hit an animal. Cuz I saw this show where this person had a sling shooter. He just popped a deer in the back with a rock.

Interviewer: And so why wouldn't you want to hit um, why wouldn't you want to hit um?

Michael: Cuz I wouldn't like it if somebody did that to me. Sometimes I just be crying over that stuff.

Interviewer: If somebody hits you?

*Michael: I'm talking about when I be watching stuff. I just be crying when they be throwing rocks.
Sometimes I feel like I am an animal.
...Sometimes I be thinking about that and I just keep a lot of people away from animals.*

Interviewer: So in what ways do you feel like you're an animal?

Michael: How I always watch shows about animals.

How I just see animals. How animals be hecks of close to me. One time I saw a blue bird right there it was right there. I thought it be scared, because it was right there, right there in my face. I just back back than I felt something strange. Than it flew away. But Than I went in my backyard. It wasn't really a parrot, but it was colorful like a parrot, and it was standing on my fence. I went close to it, but then it flew away. And I always see racoons and stuff come by. How I be seeing a lot of animals, I just think I'm an animal.

... Yeah, and I want to learn about how to make the animals not be scared.

Interviewer: You want to make the animals feel comfortable?

Yeah, ...i want to be a doctor of animals when an animal get hurt. Somebody brings them in, I just cure them. I thinking everything about animals.

Yeah, you really like animals.

Yeah, cause one day I just felt something, I just felt something like I just felt something when I was walking. When I got home I saw a show and I just started learning about them.

I asked Michael why he participated in cleaning up the Marsh when he was at MLK Jr. Shoreline Park.

I was cleaning up papers, so the animals can be free...

Interviewer: Did you like the clean up?

Yes, Cuz if this place wasn't cleaned up, we'd all be in trouble.

Interviewer: What kind of trouble?

We wouldn't be able to go nowhere Cuz if everything was dirty they'd just shut everything down. Wouldn't have no place to go shopping at.

IV. Summary

This study found that participating families have very minimal experiences with natural areas out of the city, but that they do regularly access local parks. Parent and teacher participants were very interested in environmental education programming for students and families in the area. The student interviews demonstrated how interested they are in learning about their natural surroundings. Michael's profile demonstrated his strong relationship to nature that he formed in large part through his own exploration and observation.

Consistent with Lieberman (1998), this study found that the environment is an effective point to integrate curriculum. Both teachers and one administrator talked about the need to teach literacy and science through environmental education topics. Parents commented on how surprised they were at how focused the students became when they were participating in environmental education at MLK Jr. Shoreline Park. In addition, the students interviewed expressed tremendous interest in learning about nature.

Southeast Oakland community face barriers to accessing environmental education programs. Schools lack funding for field trips, in particular for transportation. Another factor keeping teachers from participating in environmental education programs is simply that they are unaware of their existence and how to access them. Other barriers include a lack of Spanish language, time and curriculum supplies. These barriers appear to lead Southeast Oakland schools having less access to environmental education programming than other schools.

Teachers made various suggestions on how to reach a diverse audience, including developing programs that have Spanish speaking naturalists and materials; involving families in environmental education programs; and focusing programs on the local neighborhood environment. Many of the teacher's suggestions involved integrating environmental concerns while simultaneously improving the local social and economic conditions of the community. For example, teachers expressed interest in making the program local in a fashion that made the local neighborhood more attractive and safer. Parents included the social environment in their discussion of environmental concerns.

Chapter V

-Conclusions and Recommendations-

This chapter includes the conclusions, an analysis of the initial assumptions, program recommendations and recommendations for future research.

Conclusions:

To conclude I will discuss how the findings of this study along with some of the literature reviewed in Chapter 2 addressed the research questions that were discussed in Chapter 1.

Research Question 1: To what degree is there a need and interest in participating in an environmental education program at Martin Luther King Jr. Shoreline Park?

Students, teachers and parents expressed interest and excitement in an environmental education program at the park. The park affords the opportunity to educate about the environmental education content areas that parents and teachers mentioned were most important for students to learn about. Teachers, parents and students demonstrated a strong appreciation and concern for the environment. Similar to Kahn's research (1995), this study found that inner city parents are very interested in and concerned about pollution nature and wildlife. Kahn's study involved African American parents, whereas this study involved mostly Latino parents.

Research Question 2: What are the barriers that keep the community from participating in existing environmental education programs?

The most significant barrier that schools faced was funding, especially for transportation. Teachers said they would participate in environmental education programs 5 times more frequently than they currently do if transportation and field trip costs were paid for.

The MLK Jr. Shoreline Park is located along the bus lines of the Southeast Oakland Schools. Another important barrier is that teachers do not know about existing programs and how to access them. Factors that appear to contribute to this lack of information include high turnover rate amongst Oakland school teachers, and a lack of teacher prep time to research programs. The study identified other important barriers including a lack of curriculum, programming in Spanish, and time.

Existing literature did not specifically address barriers to environmental education programming in a non-white inner city environment. This study builds upon the work of research done by Ham and Sewing (1987, 1988). They found that time, a lack of science skills and teachers confidence were major barriers to teachers teaching about the environment in their classes.

Research Question 3: How can an environmental education program at MLK Jr. Shoreline Park involve the racially, culturally, and linguistically diverse community and student body of Southeast Oakland?

This study demonstrates the importance of listening to the community, finding out what concerns them, what is important to them, and what type of programming they would like to see in their community. Through this process of listening and incorporating the ideas and suggestions, greater enthusiasm and community support was generated for the program. One suggestion that emerged out of this communication and through some of the literature (Blahna 1993; Kahn 1996) was to address environmental education in a fashion that simultaneously improves the social and economic conditions of the local community. This study confirmed the findings of other studies that found that African Americans tend to see nature as a sustainer of human life (Caron 1995), and do not tend to make separation between human and wildlife systems (Meeker 1973). In this needs assessment African American teachers stressed the importance of focusing on the interdependence of wildlife and humans.

In order to reach the largely Spanish speaking students and parents in Southeast Oakland, teachers suggested providing curriculum materials in Spanish and hiring Spanish speaking naturalists to teach the programs.

Assumptions

The assumptions that were made at the outset of the study were confirmed and deepened by the end of the study. From the outset of the study I assumed that families in the local area have limited experience with natural areas. The participants of this study did have very limited experience with natural

areas. Most of the participants did visit local parks, but it was rare that they experienced nature outside of the city environment. I also assumed that East Oakland teachers are currently unaware of the educational opportunities that the MLK Jr. Park offers. This was true, in fact teachers were unaware of the existence of the Park. I assumed that the local community is concerned about the environment and would like to see an environmental education program at Martin Luther King Jr. Shoreline Regional Park. There was a lot of interest by students, parents and teachers in participating in environmental education programs at the park. There are economic, racial and linguistic barriers to existing environmental education programs that can be overcome through the design of a new environmental education program.

Program Recommendations

Existing literature and the findings of this study often appeared to be inconsistent. This is probably a reflection of the fact that studies are carried out in various locales around the country. This demonstrates the importance of not taking a cookie cutter approach to developing programs in inner city communities. Each community is distinct. I recommend that the first step to developing an environmental education program in any given community is to conduct a needs assessment or listen to what that community has to say in some other fashion. Listening to the community is not just a way of learning about the community, but it is the first step in implementing the program. You are developing relations and communications with those parties that will potentially form an important part of building the programs.

Based on the findings of this study, I make the following recommendations for developing an environmental education program in a low income, predominantly African American and Latino community: involve the local community; make the program accessible; addresses environmental issues in the context of the social and/or economic conditions of the local community; and listen and then teach.

Involve the Local Community

All of the suggestions below were made by at least one teacher:

- Involve the families in environmental education programming. Work with the schools to get parents involved. Incorporate an Environmental education component for the parents that accompany students on field trips. Offer incentives for participation.
- Involve the local community in the ongoing program evolution and decision making.
- Pay parents to play a mentorship role
- Hire local Multiracial/multilingual, project leaders and naturalists that lead activities.
- Develop a community based approach that involves elementary, middle and high schools that feed into each other. Train older students to be mentors for the younger students.

Make the Program Accessible

I recommend making special efforts to ensure that students from inner city communities of color are not left out of environmental education programming. These efforts include: Active recruitment amongst your target audience; financial support for programming and or the creation of low cost programming; and providing bilingual programming.

- Develop partnerships with other environmental education organizations that can work together to provide a comprehensive environmental education package for schools. This approach would reduce the amount time teachers would have to spend in order to access the programs.

Teachers made all of the suggestions listed below.

- Make phone or personal contact with principal, vice principal, other administrators and secretaries to get help in reaching teachers
- Arrange to make a short presentation on teacher staff meetings
- Make signing up for the program as simple as possible. Avoid application procedures. Allow teachers to confirm their classes participation over the phone.
- Make information about all free local environmental education resources available to teachers
- Develop curriculum that takes place on or within walking distance of the school grounds.
- Where necessary, provide a bus for all participating classes and/or develop programming that is accessible by public transportation.
- Provide a Curriculum Manual with activities that teachers can do in the classroom that require only inexpensive supplies.

- Make science materials (such as binoculars, scopes, magnifying glasses, etc...) available for teacher's use.
- Develop a library with videos and books that teachers can use at their schools to compliment the curriculum.
- Provide Programming in English and Spanish. Make student worksheets available in Spanish and English

Address environmental issues in the context of the social and economic conditions of the local community

The suggestions listed below were indirectly inferred by the cominents teachers and parents made.

- Develop conservation activities where participants are directly involved in improving the local environment in a fashion that will directly benefit the local community and the environment more generally. Relate curriculum to experiences that students have every day. Topics could include urban ecosystems, local wildlife, neighborhood pollution, and other local environmental concerns.
- Develop activities that involve increasing language skills
- Move to what is less familiar, out of their surroundings and even global perspective
- Enrich school wide curriculum. Develop a comprehensive environmental education package that is ongoing throughout the school year and addresses all of the statewide science benchmarks for the grade levels involved.

Listen and then teach

The suggestions I have made below are based upon how parents and students described their initial visit to the MLK Jr. Shoreline Park.

- Respect the participants that you are working with. Trust that they will make the conclusions and decisions that are right for them as it relates to the environment. Trust them to think for themselves. Avoid representing your own values as the values of good people.
- Make the activities interactive. Avoid long lectures and provide extensive opportunities for exploration and observation of nature. Use an open ended questioning styles.
- Allow space for participants to enjoy and make spiritual connections with nature.
- Encourage a cooperative environment where all students get the opportunity to teach each other what they are learning.
- Teach to a variety of learning styles. Develop activities that involve use of various senses and ways of learning. For example, learning language and investigation techniques, but also encourage students to use creative thought processes and interpretations.

Suggestions for Future Research

Based on the literature review and the findings of this study, I recommend further research in the following areas:

- Environmental concerns and aspirations of Latino and Asian American communities.
- Language barriers to environmental education.
- The impact, of racial isolation that people of color face, when entering into predominantly white mainstream environmental organizations, or wildland recreation activities, on participation rate.
- The effectiveness of community wide approaches vs. individually focused environmental education efforts.
- Students' ability to focus and learn in an outdoor setting as compared to indoors.
- Students stress levels and ability to get along with peers in a natural setting vs. an indoor or paved setting.
- Effective environmental education programs in inner city communities of color.

These recommendations will serve as an initial basis for developing a program at the MLK Jr. Shoreline Park. I view these recommendations as initial. As the program unfolds, it will be important to assess how well the program is serving the needs and preferences of the community. These needs and preferences are not static and will need to be further investigated as the process unfolds. In other words this needs assessment will be an ongoing process of communication serving to build an environmental education program in Southeast Oakland that is shaped by the input of the local community.

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Appendices

Appendix 1

Title: Environmental Education Needs and Preferences of School Constituencies

Project Chair: Dr. Vanessa Sheared
Committee Member: Dr. Doris Flowers

Department of Administration and Interdisciplinary Studies
College of Education
San Francisco State University
1600 Holloway Ave.
San Francisco, CA 94132

Student Questionnaire Consent Form

Dear Student:

I am conducting a study to see what people are interested in learning about the environment. The questionnaire is one page long. The questions are mostly multiple choice, but some of them ask for a short written response. The answers you give to the questions will help the Golden Gate Audubon Society develop a program for the Oakland Public Schools at Martin Luther King Jr. Shoreline Park. Your name will not be on the questionnaire.

Answering the questionnaire is voluntary. If you don't participate, you will not get in trouble in any way. Any information used from your questionnaire will be reported anonymously (no one will know who filled it out). Your answers on the questionnaire will not effect your school grades in any way.

If you agree to participate in this questionnaire, fill in your name below and sign your name.

I, _____, give my consent to participate in the
questionnaire for the study.

Student Signature: _____

APPENDIX 2

Title: Environmental Education Needs and Preferences of School Constituencies

Project Chair: Dr. Vanessa Sheared
Committee Member: Dr. Doris Flowers

Department of Administration and Interdisciplinary Studies
College of Education
San Francisco State University
1600 Holloway Ave.
San Francisco, CA 94132

Child's Name: _____ Date: _____

Dear Parents/Guardians:

I am a graduate student at San Francisco State University. I am conducting a study in your child's class, as part of a study to investigate the environmental education preferences and needs in Southeast Oakland.

The students will be asked to complete the one page attached questionnaire, with primarily multiple choice answers (questionnaire is attached). The results of the questionnaire will be used to help the Golden Gate Audubon Society shape a new environmental education program at the Martin Luther King Shoreline Park. Participation in the questionnaire is voluntary. There will be no penalty due to refusal to participate. All information collected from students will be anonymous and confidential. We will ask that students do not put their names on the questionnaire, to ensure that the questionnaire remains anonymous. The results of this study will in no way have any effect on the student's grade in their class.

If you have any questions about the questionnaire or your child's rights, please feel free to contact me at work, 510/748-2129. Dr. Sheared, chair of the committee, can be reached at 415/338-1653 x11479.

If your child has consent to participate in the research project, please fill out the attached consent form and return it to me as soon as possible.

Sincerely,

Amy Mayeno

Consent Form

My child _____ has my consent to participate in the educational
(students name)
research study by completing the student questionnaire on environmental education preferences and needs
in southeast Oakland.

Student is a minor _____
(age)

Parent/Guardian: _____ Date: _____

APPENDIX 3

San Francisco State University Student Survey About Environmental Education Program at MLK Jr. Shoreline Park

Date: _____

Do you have any concerns about the environment? ___ Yes ___ No

If yes, what are your concerns:

How often did you visit nature last year? _____

What do you enjoy most about nature?

What do you enjoy least about nature?

How often did you visit a park last year, where someone taught you about the parks animals and plants?

How many times have you visited Martin Luther King Jr. Shoreline Park?

How important is it to you to learn about animals and plants that live in the parks of Oakland?

How important is it to you to learn about how to protect animals and plants that live in Oakland Parks?

How important is it to you to learn how to research the environment, such as learning how to test water?

How important is it to you to learn about how to make your neighborhood environment healthier and prettier?

How important is it to you to learn about how to protect and improve the world environment?

How important is it to learn how to improve your school environment such as planting a new garden?

What other things (if any) are important for you to learn about the environment?

What languages do you speak? _____

What is the main language that your family speaks at home? _____

APPENDIX 4

Parent/guardian Interview Protocol for Needs Assessment on Environmental Education Program in Southeast Oakland

Date: _____

Do you have any concerns about the environment? _____

If yes, what are your concerns?

How often did you go into nature last year?

What do you enjoy most about nature?

What do you enjoy least about nature?

How many times have you visited Martin Luther King Jr. Shoreline Park(near the airport) last year?

What aspects of the environment are most important for students to learn about?

How important is environmental education in relation to other topics such as math, reading and writing?

If we had a program on the weekends would you bring your family?

- ☐ racial heritage? _____
- ☐ languages do you speak?
- ☐ What is the main language spoken in your home? _____

APPENDIX 5

**Needs Assessment of Environmental Education Preferences of
Southeast Oakland Teacher Survey**

(To accompany interviews)

Date: _____

How many years have you taught elementary school? _____

What grade level do you teach? _____

Which of the following classes do you teach?

___ Bi-Lingual, language: _____ ___ Sheltered English
___ English Only ___ Other

How many environmental education /interpretive programs or natural areas did you visit
with your class last year? _____

(this may include naturalist or volunteer led tours of natural areas; set curriculum
addressing nature or conservation)

Which, if any of the following environmental education/interpretive programs did your
class visit last year?

___ Crab cove ___ Oakland Zoo ___ Hayward Regional Shoreline
___ Canoes in Sloughs

Other, Please specify _____

How often have you taken your students to visit Martin Luther King Jr. Shoreline Park in
the past year?

___ Never ___ one time ___ two times ___ three times or more

On a scale of 1-5, how much emphasis should a new environmental education curriculum
put on the concepts listed below.

**1=Not important at all 2=Somewhat Important 3=Unsure 4=Important
5=Very Important**

- ___ Local wildlife and habitats
- ___ Endangered species and their habitats
- ___ Ecology concepts emphasizing the interdependence of humans, wildlife and our
habitats
- ___ The urban environment (eg. environmental toxins)
- ___ How to make urban neighborhoods safer and prettier
- ___ How to protect local wildlife and habitats
- ___ How to protect or improve the world environment
- ___ Environmental justice or environmental racism
- ___ Environmental science research skills (testing water, data collection, graphing, etc..)

What other environmentally related topics, if any, are important for your students to learn
about?

Are you interested in a teacher training to prepare students for a field trip to MLK Jr. Shoreline Park? ☐ **Yes** ☐ **No**

How many hours of free teacher training would you be interested in participating in? (circle one)

None **3 hours** **6 hours** **12 hours**
18 hours

What student curricula topics would you like covered in a teacher training at MLK Jr. Shoreline Park?

- ☐ Local wildlife and habitats
- ☐ Endangered species and their habitats
- ☐ Ecology concepts emphasizing the interdependence of humans, wildlife and our habitats
- ☐ The urban environment (eg. environmental toxins)
- ☐ How to make urban neighborhoods safer and prettier
- ☐ How to protect local wildlife and habitats
- ☐ How to protect or improve the world environment
- ☐ Environmental justice or environmental racism
- ☐ Environmental science research skills (testing water, data collection, graphing, etc..)

Other topics: _____

How important is the cost of the training in determining whether or not you would attend?

- ☐ **Unimportant** ☐ **Somewhat important** ☐ **Unsure** ☐ **Important**
☐ **Very important**

What days and times are preferable for a teacher training?

- ☐ **Saturdays during the day**
☐ **Weekday afternoons**
☐ **Weekday evenings**

How many times a year, if any, would you be interested in bringing your students to an environmental education program, available on public transportation? _____

What Language(s) do you speak? _____

What is your Country of origin? _____

What is your Heritage/Race? _____

APPENDIX 6

Teacher Survey of Environmental Education Preferences in East Oakland (Version 2)

How many years have you taught elementary school? _____ What grade level do you teach? _____

Which of the following classes do you teach?

___ Bi-Lingual, language: _____ ___ Sheltered English
___ English Only ___ Other _____

How many and which environmental education /interpretive programs or natural areas did you visit with your class last year? _____
(Please list all programs or natural areas you visited)

What aspects of the environment are most important for students to learn about?

Are there sufficient environmental education opportunities for students in Oakland?

Are there barriers that keep Oakland schools from participating more in environmental education programs? ___ Yes ___ No ___ Not Sure
If so, what are the barriers and do you have any suggestions for overcoming them?

Do you have any suggestions on how environmental education organizations can serve the needs of Oakland's racially, nationally and linguistically diverse communities?

How many times a year, if any, would you interested in bringing your students to an environmental education program, available on public transportation?

What Language(s) do you speak? _____ What is your Country of origin? _____
What is your Heritage/Race? _____ Please check the appropriate choice:
Female ___ Male ___

APPENDIX 7

Teacher Survey of Environmental Education Preferences in East Oakland

How many years have you taught elementary school? _____ What grade level do you teach? _____

Which of the following classes do you teach?

☐ Bi-Lingual, language: _____ ☐ Sheltered English
☐ English Only ☐ Other _____

How many and which environmental education /interpretive programs or natural areas did you visit with your class last year? _____
(Please list all programs or natural areas you visited)

What aspects of the environment are most important for students to learn about?

Are there sufficient environmental education opportunities for students in Oakland?

Are there barriers that keep Oakland schools from participating more in environmental education programs? ☐ Yes ☐ No ☐ Not Sure

If so, what are the barriers and do you have any suggestions for overcoming them?

Do you have any suggestions on how environmental education organizations can serve the needs of Oakland's racially, nationally and linguistically diverse communities?

How many times a year, if any, would you bring your students to environmental education programs that offered free transportation and admission costs? _____

What Language(s) do you speak? _____ What is your Country of origin? _____

What is your Heritage/Race? _____ Please check the appropriate choice:

Female ☐ Male ☐

APPENDIX 8

Teacher Interview Protocol

What aspects of the environment are most important for students to learn about?

Are there sufficient environmental education opportunities for students in Oakland?

Are there barriers that keep Oakland schools from participating more in environmental education programs?

If so, what are the barriers and do you have any suggestions for overcoming them?

Do you have any suggestions on how environmental education organizations can serve the needs of Oakland's racially, nationally and linguistically diverse communities?

Are there some segments of the student population that could particularly benefit from an environmental education program in East Oakland?



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